

ABSTRACT

The field of the invention is that of thick nonlinear optical gratings used in particular in the fields of power lasers and high-rate telecommunications. The production of thick gratings poses major technological problems. The method proposed by the invention makes it possible either to obtain a high-quality nonlinear optical grating of substantial thickness, or to produce low-attenuation waveguides. This method applies most particularly to gratings based on semiconductor materials such as GaAs, which have great technical advantages. The core aspect of the invention is to prepare the surface of a thin first grating so that it is possible to deposit at least one layer of nonlinear material by epitaxy on this surface, the deposited layer maintaining the structural properties of the first grating, the combination of the initial deposition and of the successive layers constituting the final, thick grating.